THE AGARICACEAE OF TROPICAL NORTH AMERICA—II

William A. Murrill

The genera treated in the present paper show a strong contrast to most of those in the first article of this series, both as to the number of species found in our tropics and the general information regarding them. This is chiefly due to the fact that tough forms growing on wood above ground are better adapted to tropical conditions than fleshy forms, especially the larger ones, growing in the soil, where air is scarce and bacteria and moulds abound in the rainy season, and where extreme conditions of heat and dryness prevail during the dry season. The fleshy forms are also difficult to collect and preserve, and require good field notes to make them really valuable for study.

These genera are all abundantly represented in temperate regions, some of the species being the most common ones found in our forests, but tropical conditions appear to offer an almost impassable barrier to them, *Lepiota* alone excepted. The following simple key shows how these genera may be readily distinguished.

Volva and annulus both present.	1. Leucomyces.
Volva alone present.	2. Vaginata.
Annulus alone present.	
Lamellae free.	
Spores hyaline, tinged with brown in a few species.	
Pileus dry, usually scaly.	3. Lepiota.
Pileus viscid, smooth.	4. Limacella.
Spores green when fresh, brown in herbarium specimens.	5. Chlorophyllum.
Lamellae attached.	
Stipe fleshy.	6. Polymyces.
Stipe cartilaginous.	7. Chamaemyces.

1. Leucomyces Batt. Fung. Hist. 27. 1755

Venenarius Earle, Bull. N. Y. Bot. Gard. 5: 450. 1909.

This genus includes the species usually known under the name *Amanita,* which name is properly a synonym of *Agaricus,* as

pointed out by Earle. The separation of *A. muscaria* and related species into the genus *Venenarius* is hardly practical, since the form of the basal volva is not constant in either of the two genera thus separated.

Leucomyces mexicanus sp. nov.

Pileus convex, regular, 5 cm. broad; surface milk-white, smooth, dry, with satiny luster, adorned with patches of the membranous volva, which are 2–3 mm. broad, thin, white, separable; margin thin, entire, concolorous; context thin, white, odor distinct, pleasant; lamellae white, remote from the stem, arcuate, narrow, crowded; spores oblong, smooth, hyaline, 4–5 × 2 μ; stipe cylindric, equal, white, hollow, glabrous, 4.5 cm. long, 4 mm. thick, not swollen at the base; annulus superior, membranous, ample, white, movable; volva white, circumscissile, the basal portion small, collapsed, and scarcely noticeable.

Type collected on rich earth in a moist virgin forest near Motzorongo, Mexico, 400 meters, January 15, 1910, *W. A. Murrill 1067.*

This species resembles *Lepiota* more than it does most species of *Leucomyces,* but it has a distinct volva and the pileus shows separable volval patches. The odor is pleasant, suggesting *Trametes suaveolens,* though not so distinct.

2. VAGINATA (Nees) S. F. Gray, Nat. Arr. Brit. Pl. 1: 601. 1821

Amanitopsis Roze, Bull. Soc. Bot. Fr. 23: 50. 1876.

This genus differs from *Leucomyces* chiefly in lacking a veil, although both genera have the sheath, or volva, at the base of the stipe.

Vaginata vaginata (Bull.)

Agaricus vaginatus Bull. Herb. Fr. *pl. 98.* 1782.

This species, so abundant in temperate regions, probably occurs sparingly in the northern Bahamas and in the high mountains of our tropics. The Bahamian material, collected by Mr. Nash, is pressed flat and is without notes, except that the color was white and no ring was observed. Two specimens collected by myself at Chester Vale, Jamaica (No. 351), at an elevation of over 3,000 ft., agree very well with the small, murinous, temperate form of this species, but the base of the stipe and volva were, unfortu-

nately, decayed when the plants were found. However, there are large patches on the surface of the pileus which indicate that most of the volva was carried up by it in developing, leaving very little at the base. No attempt is made to cite here the synonyms of this species.

3. LIMACELLA Earle, Bull. N. Y. Bot. Gard. 5: 447. 1909

This genus differs from *Lepiota* chiefly in having a smooth, viscid pileus instead of a dry and scaly one, as is well illustrated in one of the best known species, *L. illinita*.

Limacella agricola sp. nov.

Pileus convex, regular, rather firm for the genus, 2.5 cm. broad; surface smooth, glabrous, slimy, white, with incurved, striate margin; lamellae free, white, broad, unequal; spores subglobose, smooth, pure hyaline, often uninucleate, 4–5 μ long; stipe cylindric, even, white, glabrous, shining, slightly bulbous at the base, 2.5 cm. long, 2 mm. thick; annulus superior, slight, evanescent.

Type collected on the lawn at Constant Spring Hotel, near Kingston, Jamaica, December 20, 1909, *W. A. & Edna L. Murrill.*

4. LEPIOTA (P. Browne) S. F. Gray, Nat. Arr. Brit. Pl. 1: 601. 1821

This genus is based on the well-known "parasol mushroom" of temperate regions, *Lepiota procera*. The species seem well adapted to tropical conditions, possibly owing to their loose texture and their choice of humus or well-drained locations. For present purposes, the various genera recognized by Earle, *Cystoderma, Fusispora, Mastocephalus,* and *Lepiota,* are all kept together. The following artificial grouping of the species here treated is given for the convenience of the student:

Pileus small, 3 cm. or less broad.	
Pileus white or whitish, the umbo usually differently colored.	1–5.
Pileus some shade of red.	6–7.
Pileus some shade of gray or brown.	8–11.
Pileus medium or large, 4 cm. or more broad.	
Pileus white or yellowish, the umbo often differently colored.	12–17.
Pileus some shade of red.	18.
Pileus brown.	19.

1. **Lepiota lactea** sp. nov.

Pileus thin, convex, slightly umbonate, solitary, 1–1.5 cm. broad; surface white, smooth, slightly silky, especially near the

margin; lamellae free, crowded, rather broad, plane, white; spores ovoid, regular, smooth, hyaline, $5 \times 3.5\,\mu$; stipe white, hollow, subglabrous, tapering upward from an enlarged base, 4 cm. long, 2–5 mm. thick; annulus large, white, persistent, near the middle of the stipe.

Type collected on the ground in a banana field at Santiago de las Vegas, Cuba, June 17, 1904, *F. S. Earle 75*. This species is related to *L. colimensis,* but is quite distinct.

2. **Lepiota colimensis** sp. nov.

Pileus convex, regular, solitary, not umbonate, 1.5 cm. broad, 5 mm. high; surface dry, white, delicately floccose, not scaly, the center concolorous; lamellae free, white; spores broadly fusiform, smooth, pure hyaline, $7–8 \times 3.5–4.5\,\mu$; stipe long, slender, white with an avellaneous tint, cepaeform at the base, 4 cm. long, 2 mm. thick above, 7 mm. thick below; annulus superior, large, white, persistent, apparently fixed.

Type collected on the ground in an orchard at Colima, Mexico, 500 m., January 3, 1910, *W. A. & Edna L. Murrill 618*. A small specimen of what appears to be the same species was collected in a moist forest at Motzorongo, Mexico, 400 m., January 15, 1910, *W. A. & Edna L. Murrill 1023*.

3. **Lepiota tepeitensis** sp. nov.

Pileus convex to expanded, slightly umbonate, 3 cm. in diameter; surface white, uneven, fuliginous at the center, adorned with fuliginous, imbricate scales, the remains of the cuticle; lamellae free, white, broad, rather crowded; spores ellipsoid, smooth, pure hyaline, usually uninucleate, $7 \times 4\,\mu$; stipe white, glabrous, tapering upward, 4 cm. long, 3 mm. thick; annulus slight, evanescent.

Type collected in humus in a moist virgin forest along the Tepeite River, near Cuernavaca, Mexico, 2300 m., December 28, 1909, *W. A. & Edna L. Murrill 522*. The general appearance of the plant suggests *Lepiota ianthina* Cooke, first found in greenhouses at Kew Gardens, but the disk and its radiations are fuliginous instead of dark-violet.

4. **Lepiota flavodisca** sp. nov.

Pileus thin, conic to subexpanded, the center remaining conic in form, solitary, 2 cm. broad; surface white, minutely crested, long and deeply striate, becoming plicate on drying, the center flavous,

subglabrous to granulose; lamellae white, free, rather crowded; spores ovoid, smooth, hyaline, uninucleate, 5–7 × 3–4 μ; stipe slender, enlarged and flavous at the base, hollow, minutely tomentose, 3 cm. long; annulus slight, evanescent.

Type collected in Bermuda grass sod at Santiago de las Vegas, August 1, 1904, *F. S. Earle 139*. A colored sketch by Mrs. Earle has proved valuable in drawing the description.

5. **Lepiota subcristata** sp. nov.

Pileus convex, umbonate, solitary, 7.5 mm. broad, 5 mm. high; surface floccose, pale-isabelline, with dark-avellaneous, imbricated scales, the umbo smooth, purplish-fuliginous; lamellae free, white; spores ellipsoid, smooth, hyaline, 5 × 3 μ; stipe slender, equal, glabrous, purplish-fuliginous, 1.5 cm. long, 1 mm. or less thick; annulus slight, evanescent.

Type collected on rotten wood near Moore Town, Jamaica, 200 m., December 16, 1908, *W. A. & Edna L. Murrill 158*. What appears to be the same species, though there are no field notes, was collected by W. E. Broadway in August and September, 1905, at The Bower, St. George's, Grenada. In one of these collections, the sporophores measure over 1 cm. in diameter, in the other, about 5 mm.

6. **Lepiota testacea** sp. nov.

Pileus conic, truncate, regular, 4 mm. broad, 2 mm. high, solitary; surface smooth, pale-testaceous, covered with fine tomentum, margin fibrillose; lamellae free, white, ventricose, broad; spores ovoid, smooth, hyaline, uninucleate, 7 × 3.5–4 μ; stipe cylindric, enlarged at the base, glabrous, white, 1 cm. long, scarcely 1 mm. thick; annulus superior, large, persistent, white, fixed by the lower margin.

Type found growing in rich soil on a damp, shaded bank near Chester Vale, Jamaica, 1,000 m., December 22, 1908, *W. A. & Edna L. Murrill 355*. Also collected on the same day in a nearby locality, *W. A. & Edna L. Murrill 401*. The relationship of this species is with *L. rubrotincta*. It is such a tiny plant that it is easily overlooked.

7. **Lepiota subgranulosa** sp. nov.

Pileus hemispheric, 1 cm. broad, 5 mm. high, solitary; surface testaceous, finely granulose, adorned with minute, conical tufts

of fibrils; lamellae free, narrow, close, white to stramineous; spores ellipsoid, smooth, hyaline, a few distinctly uninucleate, not apiculate, $7 \times 3.5\,\mu$; stipe testaceous, fibrillose, cylindric, equal, not enlarged at the base, rose-colored at the apex, 1.5 cm. long, 2 mm. thick; annulus testaceous, superior, very close to the lamellae, fixed by the lower margin, the free limb narrow and perpendicular to the stipe.

Type collected in coffee plantations at Xuchiles, near Cordoba, Mexico, 500 m., January 17, 1910, *W. A. & Edna L. Murrill 1146.*

8. **Lepiota Broadwayi** sp. nov.

Pileus expanded, regular, scarcely umbonate, about 3 cm. broad; surface dry, subglabrous, striate, avellaneous, fuliginous at the center, the cuticle remaining almost unbroken; lamellae free, white, broad, unequal; spores perfectly globose, hyaline, smooth, $5\,\mu$; stipe 3 cm. long, 3 mm. thick, enlarged above, hollow, glabrous, whitish; annulus white, ample, superior, persistent, apparently fixed.

Type collected on the ground between roots of trees in Hyde Park, St. George's, Grenada, August 27, 1905, *W. E. Broadway.*

9. **Lepiota subgrisea** sp. nov.

Pileus small, convex to expanded, slightly umbonate, gregarious, 1–1.5 cm. broad; surface avellaneous, adorned with imbricated scales arranged in a somewhat radiate manner from the glabrous, fuliginous umbo; lamellae free, white, of medium breadth and distance; spores ellipsoid, smooth, hyaline, uninucleate, apiculate, 7×3.5–$4\,\mu$; stipe white, glabrous, slightly tapering upward, 1.5 cm. long, 1–2 mm. thick; annulus slight, evanescent.

Type collected near the coast west of Port Antonio, Jamaica, December 18, 1908, *W. A. & Edna L. Murrill 246.* Also collected at Moneague, Jamaica, January 17, 1909, *W. A. & Edna L. Murrill 1135.* This species is closely related to *L. fulvaster,* from South Carolina.

10. **Lepiota aspratella** sp. nov.

Pileus expanded, often becoming depressed, somewhat umbonate, gregarious, 1–2 cm. broad; surface yellowish-brown, thickly studded with small, granular, somewhat conical warts, which are slightly browner than the rest of the surface; lamellae free, white, much crowded, rather broad, ventricose; spores ellipsoid or ovoid, smooth, hyaline, $5 \times 3.5\,\mu$; stipe curved, usually equal, concolor-

ous, floccose-scaly over its entire surface, 2–3 cm. long, 1.5–3 mm. thick; annulus not distinct.

Type collected on a much decayed log in an orange grove at Chester Vale, Jamaica, 1,000 m., December 23, 1908, *W. A. & Edna L. Murrill 379*. Also collected at Chester Vale, *W. A. & Edna L. Murrill 389*. This species is closely related to *Lepiota asprata,* described by Berkeley from South Carolina, but the surface covering is very distinct.

11. **Lepiota rimosa** sp. nov.

Pileus convex to expanded, umbonate, gregarious, 1–2 cm. broad; surface smoky-fuliginous, paler with age, faintly striate, often splitting from the margin, covered with a granular coating which cracks areolately with age exposing the white flesh; lamellae free, crowded, very broad, somewhat ventricose, white; spores subglobose or broadly ovoid, smooth, hyaline, 4 μ long; stipe cylindric, white, subglabrous, 2–4 cm. long, 1–2 mm. thick; annulus small, white, persistent, about the middle of the stipe.

Type collected on the ground in a garden at Santiago de las Vegas, Cuba, June 19, 1904, *F. S. Earle 110*. This is possibly the plant reported from Cuba by Berkeley and Curtis as *L. floralis,* a species described from South Carolina.

12. LEPIOTA CRISTATA (Bolt.) Quél. Champ. Jura Vosg. 34. 1872

Agaricus cristatus Bolt. Hist. Fung. Halifax 1: 7. *pl. 7*. 1788.
Agaricus subantiquatus Batsch, Elench. Fung. 2: 59. *f. 205*. 1789.

This well-known temperate species was collected in coffee plantations near Cordoba, Mexico, and in orchards at Colima, Mexico. This tropical form is smaller and much paler than the form commonly seen in the United States and Europe, and the scales on the pileus are comparatively inconspicuous, but it probably does not merit specific distinction. The margin becomes yellow when bruised.

Mexico, *W. A. & Edna L. Murrill 602, 1138*.

13. LEPIOTA LONGISTRIATA Peck, Bull. Torrey Club 25: 368. 1898

This species, described from plants collected by Earle in gardens in Alabama, is whitish, with brown umbo, hairy-squamulose, and

marked with very long striations. The Cuban specimens mentioned below were found in gardens and on a lawn, while the Jamaica collection was made in woods.

Santiago de las Vegas, Cuba, *Earle 290, 362, 531;* Port Antonio, Jamaica, *Earle 602.*

14. **Lepiota cretacea** (Bull.)

Agaricus cretaceus Bull. Herb. Fr. *pl. 374.* 1787. (Type from France.)

Agaricus luteus With. Bot. Arr. **3**: 344. 1792. (Type from England.)

Agaricus cepaestipes Sowerby, Eng. Fungi *pl. 2.* 1797. (Type from England.)

Agaricus (*Lepiota*) *sordescens* Berk. & Curt. Jour. Linn. Soc. **10**: 283. 1868. (Type from Cuba.)

Agaricus (*Lepiota*) *cheimonoceps* Berk. & Curt. Jour. Linn. Soc. **10**: 283. 1868. (Type from Cuba.)

Lepiota cepaestipes Quél. Champ. Jura Vosg. 35. 1872.

Lepiota farinosa Peck, Ann. Rep. N. Y. State Mus. **43**: 35. 1890. (Type from Massachusetts.)

?Lepiota Magnusiana P. Henn. Hedwigia **31**: 318. 1892. (Type from Germany.)

Lepiota mammaeformis Underw. Bull. Torrey Club **24**: 82. 1897. (Type from Alabama.)

This edible, cosmopolitan species occurs in attractive and conspicuous groups or clusters, the pileus being white, or rarely yellow, and the base of the stipe usually swollen like a young onion. The mealy or warty covering over the entire sporophore strongly suggests *Amanita solitaria* and *A. echinata.* The spores are ovoid or ellipsoid, often pointed at one end, smooth, hyaline, usually uninucleate, 8–11 × 5–7 μ. *Hiatula squamulosa* Mont., described from Guiana, resembles this species, but the spores are described as ovoid-reniform. *Agaricus apodactylus* Berk. & Curt., from Cuba, is not distinct, but this is probably only a manuscript name.

Cuba, *Earle 15, 16, 547, 559, 28, 113, 52, 550, 301;* Grenada, *Broadway;* Guadeloupe, *Duss;* Santo Domingo; Nicaragua, *Oersted.* Also in the United States, South America, Europe, and the Orient.

15. LEPIOTA SUBCLYPEOLARIA (Berk. & Curt.) Sacc. Sylloge Fung. 5: 67. 1887

Agaricus (*Lepiota*) *subclypeolarius* Berk. & Curt. Jour. Linn. Soc. 10: 283. 1868. (Type from Cuba.)

The rather poorly preserved types of this species, as well as other specimens at Kew from tropical America, resemble *L. cretacea,* but the spores are very different, being broadly ellipsoid, smooth, hyaline, averaging $6 \times 4.3\,\mu$, and not showing a large nucleus as in that species.

16. LEPIOTA HEMISCLERUS (Berk. & Curt.) Sacc. Sylloge Fung. 5: 66. 1887

Agaricus (*Lepiota*) *hemisclerus* Berk. & Curt. Jour. Linn. Soc. 10: 283. 1868. (Type from Cuba.)

The types at Kew, collected by Wright, are well preserved, showing the small, rigid, conical warts on the pileus very distinctly. The spores are said to be narrowly oblong, smooth, hyaline, $11\,\mu$ long. These latter, with the warts on the pileus, strongly suggest *L. cretacea.*

17. **Lepiota jamaicensis** sp. nov.

Pileus 10 cm. in diameter, convex to plane, with a prominent hemispherical umbo, cespitose on dead wood, the entire sporophore becoming reddish-brown when bruised or on drying; surface dry, white or very pale yellowish, adorned with brownish, floccose scales 1 mm. broad, the remains of the cuticle; umbo brown, minutely scaly; context thin, white; lamellae free, white, becoming discolored when the spores mature; spores ovoid, rounded at both ends, not apiculate, often uninucleate, very pale brown, 9×6–$7\,\mu$; stipe enlarged at the base, tapering upward, 10 cm. or more long, 1.7 cm. thick below, 0.7 cm. thick above, subglabrous, slightly reddish-brown; annulus large, superior, movable, reddish-brown.

Type collected on a hardwood stump in a cocoanut plantation near Manchioneal, Jamaica, at an elevation of about 100 m., December 17, 1908, *W. A. Murrill 181.*

This plant closely resembles *Lepiota americana* Peck, a well-known temperate species, both in shape and color, but grows in dense clusters on dead wood, has decidedly browner spores, and much smaller scales on the pileus, as well as a minutely scaly

umbo. Its affinities are evidently with *Lepiota,* although the spores are not altogether hyaline.

18. LEPIOTA RUBROTINCTA Peck, Ann. Rep. N. Y. State Mus. 44: 67. 1892

Agaricus rubrotinctus Peck, Ann. Rep. N. Y. State Mus. **35**: 155. 1884. (Type from New York.)

Mastocephalus carneo-annulatus Clements, Bot. Survey Neb. **4**: 17. 1896. (Type from Nebraska.)

This very beautiful species occurs occasionally at several points in our tropics, from sea-level up to 2,000 ft., and more frequently in the United States, at various elevations, the spores as well as the sporophore showing considerable variation. It also very probably ranges southward into South America under forms represented by *L. carminea* Pat. and *L. erythrella* Speg. *L. purpureoconia* Atkinson seems hardly sufficiently distinct. I am indebted to Dr. Peck for the determination of specimens from Louisiana.

Bahamas, *Brace 4815;* Cuba, *Britton & Wilson 398, 400;* Jamaica, *Earle 505, Murrill & Harris 867;* Honduras, *M. E. Peck.* Also in the United States.

19. **Lepiota abruptibulba** sp. nov.

Pileus fleshy, rather thin, 6–7 cm. broad, hemispheric to subexpanded, at first umbonate, at length obtuse; surface rich reddish-brown, the cuticle breaking into minute, floccose-granular scales, not striate, darker on the umbo; lamellae white, free, crowded, unequal, rather broad; spores subglobose to ovoid, smooth, hyaline, tinged with brown, 5–5.5 × 4 μ; stipe cylindric, subglabrous, tinged with reddish-brown, hollow, 7 cm. long, 6 mm. thick, the base swollen into an abrupt, flattened bulb; annulus large, persistent, superior, movable.

Type collected on the ground in a banana field near Santiago de las Vegas, Cuba, June 18, 1904, *F. S. Earle 94.* Also collected in the same locality in June and September, *F. S. Earle 67, 167;* and in thickets near Candelaria, Cuba, *F. S. Earle 209.* The description is mainly drawn from Professor Earle's excellent field notes.

5. CHLOROPHYLLUM Mass. Kew Bull. 135. 1898

This genus was separated from *Lepiota* on the basis of the green color of its fresh spores, with *C. esculentum* as its type and *C. Morgani* and *C. Molybdites* as additional species. We now know that these three names all refer to the same plant, which ranges from Brazil northward through the United States. The European species, *Schulzeria Eyrei* Mass., also has green spores, but no annulus.

The green color in the spores of *Chlorophyllum* seems to disappear rather quickly on drying, leaving the spores pale-brown, so that herbarium specimens are usually referable to the genus *Agaricus,* although otherwise resembling *Lepiota.* In describing *Agaricus guadelupensis,* Patouillard remarks that it is exactly intermediate between *Agaricus* and *Lepiota,* the spores being too pale for the former genus and too dark for the latter.

A dozen or more of the Boletaceae, among them several of our commonest species, have spores that are greenish or olivaceous when fresh, fading to brownish on drying, but in none is the green color so pronounced as in *Chlorophyllum.*

CHLOROPHYLLUM MOLYBDITES Mass. Kew Bull. 136. 1898

Agaricus Molybdites Mey. Fl. Esseq. 300. 1818. (Type from Guiana.)

Pholiota Glaziovii Berk.; Warming, Symb. Fl. Bras. 32. 1878. (Type from Brazil.)

Agaricus Morgani Peck, Bot. Gaz. **4**: 137. 1879. (Type from Ohio.)

Lepiota ochrospora Cooke & Mass. Grevillea **21**: 73. 1893. (Type from Guiana.)

Chlorophyllum esculentum Mass. Kew Bull. 136. 1898. (Type from Guiana.)

?Agaricus guadelupensis Pat. Bull. Soc. Myc. Fr. **15**: 197. 1899. (Type from Guadeloupe.)

This very large and attractive species, found in pastures and cultivated grounds, is of unusual interest on account of its green spores. It is used for food in many places, but is poisonous to some persons, though never fatal. It was first described from Guiana by Meyer, and was known to Fries through Lund's col-

lections in Brazil. Berkeley assigned the name *Pholiota Glaziovii* to specimens collected near Rio Janeiro, Brazil. Specimens collected by Jenman in British Guiana were named *Lepiota ochrospora,* owing to the fact that the spores in dried specimens appeared ochraceous by transmitted light. Other specimens collected at the same time by Jenman in pastures near the coast received the name of *Chlorophyllum esculentum,* because the gills were observed to turn green at maturity and the plant was known to be edible. Even in poorly preserved specimens, it is readily recognized by its peculiar spores, which are ovoid, smooth, pale-brown in herbarium material, apiculate, 7–9 × 5–6 μ, at times slightly larger, especially in fresh specimens.

Cat Island, Bahamas, *Britton & Millspaugh 5862;* Jamaica, *Earle 439, Underwood 3482;* Grenada, *Broadway;* Trinidad; British Guiana; Brazil. Also in New Jersey, North Carolina, Alabama, Louisiana, Mississippi, Texas, Ohio, Indiana, Kansas, Colorado, Nebraska, Michigan, Wisconsin, and Iowa.

6. POLYMYCES Batt. Fung. Hist. 34. 1755

Armillariella Karst. Acta. Soc. Faun. Fl. Fenn. **2**: 4. 1881.

POLYMYCES CINEREUS Batt. Fung. Hist. 34. 1755

Agaricus melleus Vahl, Fl. Dan. 9. *pl. 1013.* 1792.
Agaricus polymyces Schw. Schr. Nat. Ges. Leipzig **1**: 80. 1822.
Agaricus (*Armillaria*) *melleorubens* Berk. & Curt. Jour. Linn. Soc. **10**: 283. 1868. (Type from Cuba.)
Armillaria mellea Quél. Champ. Jura Vosg. 38. 1872.

This is a very important tree parasite in temperate regions, and is also much used for food. In the tropics, it is evidently not thoroughly at home, having been found by our collectors only at Mooretown, Jamaica, and at Jalapa, Mexico. For a description and a colored illustration of this species, see MYCOLOGIA **1**: 2.

Cuba, *Wright 45;* Jamaica, *Earle 560, W. A. & Edna L. Murrill 168;* Mexico, *W. A. & Edna L. Murrill 21, 25, 136.*

DOUBTFUL SPECIES

Armillaria umbilicata Pat. Bull. Soc. Myc. Fr. **15**: 191. 1899. Described from plants collected by Duss in Guadeloupe.

7. CHAMAEMYCES Batt. Fung. Hist. 32. 1755

Mucidula Pat. Hymén. Eur. 95. 1887.

This genus, founded on the species commonly known as *Armillaria fracida* Fries, differs from *Polymyces* chiefly in its subcartilaginous stem, the adnate gills being hardly distinctive in this instance.

Chamaemyces alphitophyllus (Berk. & Curt.)

Agaricus (*Amanita*) *cubensis* Berk. & Curt. Jour. Linn. Soc. 10: 282. 1868. (Type from Cuba.)

Agaricus (*Armillaria*) *cheimonophyllus* Berk. & Curt. Jour. Linn. Soc. 10: 284. 1868. (Type from Cuba.)

A. (*Mycena*) *alphitophyllus* Berk. & Curt. Proc. Am. Acad. 4: 112. 1860. (Type from the Bonin Islands.)

A. (*Mycena*) *leucoconis* Berk. & Curt. Proc. Am. Acad. 4: 113. 1860. (Type from the Bonin Islands.)

This interesting species, easily identified by its immense globose spores, 16 μ or more in diameter, is common on exposed hardwood logs and decayed spots in standing trunks throughout the lowlands of Cuba, Jamaica, and Guadeloupe, and also occurs in Louisiana, Mexico, and elsewhere in our tropics. The only collection made above 2,000 ft. seems to have been at Jalapa, Mexico, at an elevation of 5,000 ft. Earle found it common on willow in one of the parks at New Orleans in August, 1908. It was first described from the Bonin Islands, and, according to Patouillard, it also occurs in Tonkin.

Cuba, *Wright, Earle 38, 112, 151, 267, 376, 294, 268, 150, 278, Baker 262, Underwood & Earle 420, 1137, 1112;* Honduras, *M. E. Peck;* Mexico, *W. A. & Edna L. Murrill 166, 1071;* Jamaica, *Earle 263, 562, 573, Underwood 3339, W. A. & Edna L. Murrill 120, 124, 828, Murrill & Harris 1067, 1075, E. G. Britton 996;* Guadeloupe, *Duss;* Grenada, *Broadway;* Montserrat, *Shafer 875;* Louisiana, *Earle 12;* Bonin Islands, *Wright.*

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